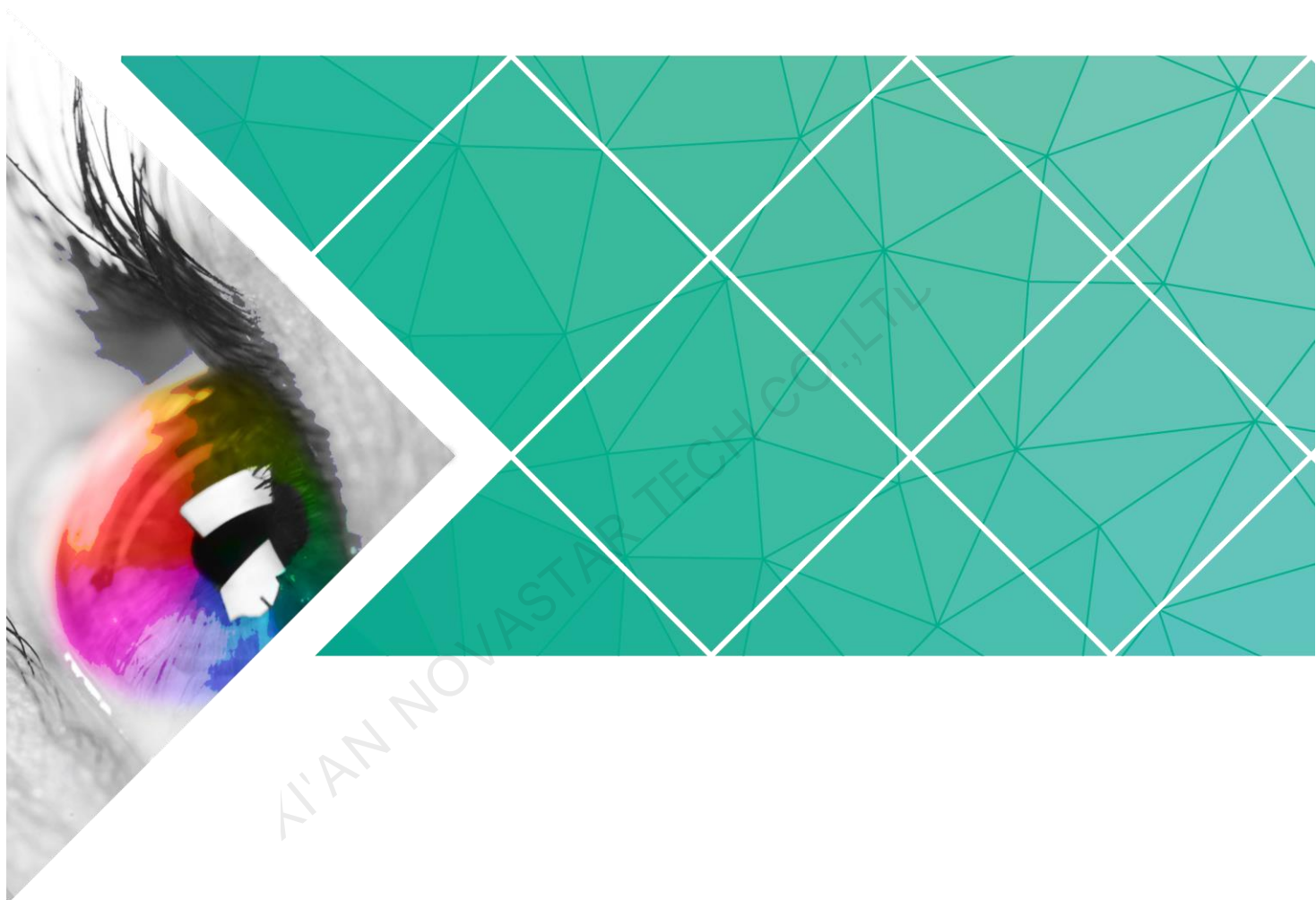# VNNOX

Cloud-Based Publishing Service

User Guide

Product Version: V5.13.0

Document Number: NS170100100

Copyright © 2018 Xi'an NovaStar Tech Co., Ltd. All Rights Reserved.

No part of this document may be copied, reproduced, extracted or transmitted in any form or by any means without the prior written consent of Xi'an NovaStar Tech Co., Ltd.

Trademark

Statement

You are welcome to use the product of Xi'an NovaStar Tech Co., Ltd. (hereinafter referred to as NovaStar). This document is intended to help you understand and use the product. For accuracy and reliability, NovaStar may make improvements and/or changes to this document at any time and without notice. Any problem in use or any good suggestion, please contact us through ways provided in the document. We will do our utmost to solve the problems and adopt the suggestions after evaluation as soon as possible.

Contents

1 Overview

1.1 VNNOX Introduction

With the development of smart city and commercial display, there are more and more LED display applications and large-scale cluster deployment. As a result, the number of displays is increasing rapidly. Users are in urgent need of remote centralized management for a large number of LED displays located in different places.

To meet users' needs, NovaStar has launched a secure cloud-based publishing service VNNOX which enables remote content management and terminal control.

VNNOX can be applied to any display device and application scenario. As long as the Internet is available, users can access VNNOX with PC, tablets or mobile phones at any time and in any place to transmit solutions to displays and play solutions as required.
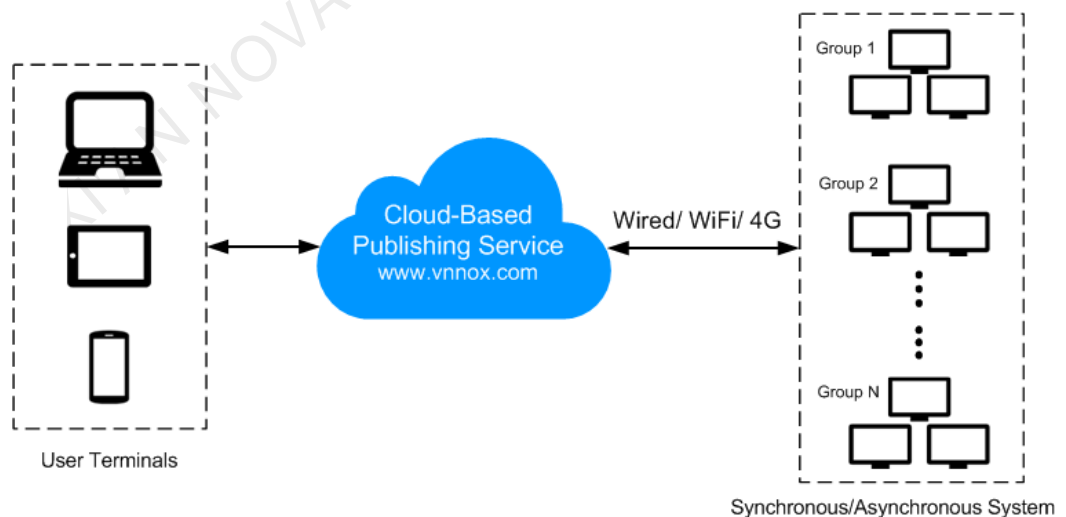
1.2 Secure & Reliable

VNNOX delivers secure and reliable industry solutions for cluster management of LED displays.

Secure

VNNOX guarantees system security through following mechanisms:

- Input checking: Check the security and validity of the data input from the Web client.
- Client authentication: Use OAuth2.0 for the authentication of accessed clients.
- Security report: Record the visits that trigger the security mechanism in the security report, then analyze the security report and give warnings about security issues so as to avoid attacks in advance.
- Download authentication: Use a virtualized cluster cloud storage solution to make sure media storing and downloading service are highly available and guarantee the security of media downloading through authentication mechanism.
- Authorized access: Terminals access the system through organization isolation and user name and password authorization.
- Transmission encryption: Use HTTPS protocol to keep the data encrypted during network transmission and avoid packet capture and data tampering.

Reliable

VNNOX keeps the service stable through disaster recovery mechanism for the server and prevents data loss through data backup mechanism to offer you a highly reliable service.

At the same time, our technical support engineers are always ready for 24/7 support and service.

1.3 Advanced Solutions & Practical Functions

Based on users' actual needs and years of industry experience, VNNOX is designed with the concepts of simplicity, ease-of-use and reliability.

Advanced Solutions

VNNOX has adopted advanced cloud service technology and users are able to have access to the services they required only by visiting VNNOX over the Internet.

Advantages:

- More convenient: Users can visit and operate VNNOX via Web any time anywhere as long as the Internet is available.
- Securer: VNNOX guarantees system security through channel encryption, data fingerprint, and permission management.
- More efficient: Edit and publish solutions and control displays remotely through a unified platform.
- More intelligent: VNNOX has adopted a smart technical algorithm and monitoring which greatly reduce users' amount of work and enhance the efficiency.
- More reliable: Keep VNNOX highly reliable through disaster recovery mechanism for the server and data backup mechanism.

Practical Functions

Function	Sub-function	Operation	Description
Shortcut Menu Settings	-	Setting Shortcut Menus	Capable of setting shortcut menus for the functions.
Personal Settings	-	Setting Personal Information	Capable of setting the basic user information and system language.
Binding NovaiCare	-	Binding NovaiCare	Capable of quickly jumping to NovaiCare from VNNOX.
Organization Management	Organization Information	Customizing the System	Capable of self-defining VNNOX as users' own brand and setting the relevant information of system security.
	System Management	• Setting Approval Function • Setting Player Authentication Information • Setting Timeout	
Authority Management	Roles	• Viewing Roles • Creating Roles • Modifying Role Attributes • Deleting Roles	Capable of managing, and controlling users' permissions to operate VNNOX and access resources according to permissions and domains so as to prevent unauthorized operations.
	Workgroups	• Viewing Workgroups • Creating Workgroups • Modifying Workgroup Attributes • Deleting Workgroups	
	Users	• Viewing Users • Creating Users • Modifying User Attributes • Deleting Users	
Media Management	Media	• Viewing Media • Adding Media • Editing Pages • Modifying Media Attributes • Adding Media to Playlists • Deleting Media	Capable of editing solutions online and providing a professional, simple and visualized operating platform.

Function	Sub-function	Operation	Description
	Playlists	• Viewing Playlists • Creating Playlists • Modifying Playlist Attributes • Deleting Playlists	
	Solution	• Viewing Solutions • Creating Solutions • Modifying Solution Attributes • Setting Solution Schedules • Setting Solution Insertion • Deleting Solutions	
	Category	• Viewing Categories • Creating Categories • Modifying Category Attributes • Deleting Categories	
Playlists Management	Frame	• Viewing Frame Templates • Creating Frame Templates • Modifying Frame Template Attributes • Deleting Frame Templates	Support for any layout, multiple media combination and independent playback of multiple windows.
	Page Template	• Viewing Page Templates • Creating Page Templates • Editing Page Templates • Deleting Page Templates	
Players Management	Players	• Viewing Players • Creating Players • Modifying Player Attributes • Deleting Players • Associating Solutions • Remotely Controlling	Capable of creating synchronous and asynchronous players to enable remote centralized solution publishing in manual or auto mode as well as remote terminal control.

Function	Sub-function	Operation	Description
		Terminals in Real Time • Cleaning up Media	
	Play Log	Viewing Play Logs	
	Remote Control Plan	• Viewing Remote Control Plans • Creating Remote Control Plans • Modifying Remote Control Plans • Deleting Remote Control Plans	
	Time Synchronization	• Viewing Time Synchronous Tasks • Creating Time Synchronous Tasks • Modifying Time Synchronization Task Attributes • Deleting Time Synchronization Tasks	
License Management	-	• Viewing Licenses • Buying Licenses • Renewing Licenses • Viewing Order History	Capable of buying licenses. A player becomes available after associating a valid license.

2 Registration and Login

2.1 Registration of VNNOX

Step 1　Visit http://www.vnnox.com and click **Register** at the top right of the page.

Step 2　Select a server node and click **Ok**.

Step 3　Enter the information required for registration.

Registering by email is the default way of registration. Click **By Phone** to switch to the page for registering by phone.

Step 4　Click Register.

System prompts that the registration is successful and then the login page appears.

Upon successful registration, the default role of the user is system administrator and the user has all the permissions. The default workgroup of the user is system workgroup and the user can manage all the resources. The default role and workgroup cannot be changed. At the same time, VNNOX assigns five free licenses to the user and each of the licenses is valid for one month.
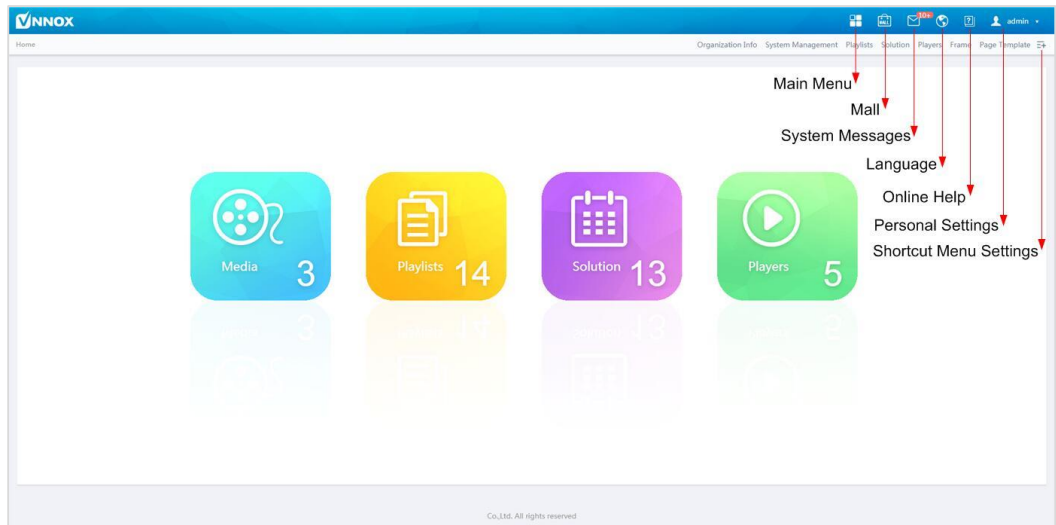
2.2 Login of VNNOX

Step 1　Visit http://www.vnnox.com and click **Login** at the top right of the page.

Step 2　Select the server node and click **Ok**.

Step 3　Enter the account name and password, and then click **Login**.

After successful login, the **Home** page appears, as shown in Figure 2-1.

Figure 2-1 The Home page

3 Functions

3.1 Shortcut Menu Settings

Application Scenarios

Quickly access the sub-menus in ⊞.

Related Information

Shortcut menu is a quick access to system functions. Users can set shortcut menus for their frequently used functions to make operation more efficient.

Setting Shortcut Menus

Step 1 Click ☰+ at the top right of the page.

Step 2 Select one or more menus in the pop-up dialog box, such as **Solution** and **Players**.

Step 3 Click **Ok**, and the following shortcut menus appear.

Solution   Players   ☰+

3.2 Personal Settings

Application Scenarios

Current VNNOX user views or updates personal settings.

Related Information

Personal settings include the basic information and workgroup of the current user, and system language.

Setting Personal Information

Step 1 Click ![admin] at the top right of the page and select **Personal Settings** from the drop-down list.

Step 2 Set basic user information and system language or view the workgroup of the user.

Table 3-1 Personal settings

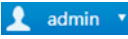| Tab Name	Description
Basic Info	For following operations: • Set first name and last name. • View the role of the user. • Change email address. • Change phone number. • Change login password.
Workgroup	View the workgroup of the user.
Language Settings	Set system language. Click ![globe] at the top right of the page to directly enter this tab.

Step 3 After the settings are completed, click **Save** or **Save&Close**.

3.3 Binding NovaiCare
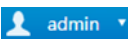
Application Scenarios

Quickly jump to the NovaiCare system from the VNNOX system.

Related Information

After NovaiCare is bound successfully, the user name and password are not required while jumping to NovaiCare from VNNOX.

Setting Personal Information

Step 1 Click ![admin] at the top right of the page and select **Bind NovaiCare** from the drop-down list.

Step 2 Enter your NovaiCare login user name and password, and then select the server node.

Step 3 Click **Bind**. The NovaiCare icon ![icon] appears at the top right of the page, and the **Bind** button changes to **Unbind**.

Related Operations

Click **Unbind** to unbind NovaiCare from VNNOX. After NovaiCare is unbound successfully, the ![icon] icon disappears.

3.4 Organization Management

3.4.1 Organization Information

Application Scenarios

Users add the information and Logo of their own companies to customize VNNOX.

Related Information

Organization information refers to the website, name, copyright, Logo, etc. of the VNNOX system. Users can customize VNNOX as their own brand by setting these information.

Customizing the System

Step 1 Select **Organization Management** > **Organization Info** from the pop-up menu of the ⊞ at the top right of the page.

Step 2 Customize the company name and set **The custom system** to **Yes**. Then all the user-definable items are shown on the page.

Step 3 Set the parameters according to the prompts. Then click **Save** or **Save&Close**.

3.4.2 System Management

Application Scenarios

- Approval setting: Control the distribution of media.
- Player authentication: For player authentication when synchronous and asynchronous terminals bind players.
- Session timeout: Automatically log out VNNOX if users do not perform any action for a long period of time.

Related Information

VNNOX provides settings related to security, including media approval, player authentication and auto logout after timeout, to enhance the security of system operation and media publishing.

3.4.2.1 Setting Approval Function

Choose to enable or disable the **Approval** function in **Media Management** > **Media**.

Step 1 Select **Organization Management** > **System Management** in the pop-up menu of ⊞ at the top right of the page.

Step 2 Set Enable media items approval to Yes or No.

- Yes: Select a record in the media list, click **Attribute**, and then the **Approval** tab appears. Users can approve, request for approval or refuse media. Approved media can be distributed while refused media cannot be distributed.
- No: Select a record in the media list, click **Attribute**, and the **Approval** tab is not shown. Approval is not needed and the media can be distributed directly.

Step 3   Click Save or Save&Close.

3.4.2.2 Setting Player Authentication Information

After successful registration, VNNOX will generate the following default authentication information automatically.

- Certified username: *Username*_**player**
- Certified password: **123456**

Authentication information is required when synchronous and asynchronous terminals bind players. We recommend modifying the default authentication information.

Step 1   Select **Organization Management** > **System Management** in the pop-up menu of ⊞ at the top right of the page.

Step 2   Select the Player Authentication tab.

Step 3   Set user name and password. Then click **Save** or **Save&Close**.

3.4.2.3 Setting Timeout

Log out the VNNOX system automatically if users do not perform any action within the time preset in session timeout.

Step 1   Select **Organization Management** > **System Management** in the pop-up menu of ⊞ at the top right of the page.

Step 2   Select the **Other Settings** tab.

Step 3   Set the duration for session timeout and then click **Save** or **Save&Close**.

3.5 Authority Management

The VNNOX system restricts users to the permissions corresponding to their roles. Users can access the media and playlists of their workgroups and sub-workgroups, and system workgroup.

The relationship among authority, role, user and workgroup is shown as Figure 3-1.

Figure 3-1 Authority management

3.5.1 Roles

Application Scenarios

Assign one or more roles to a user, and the user will have all the permissions corresponding to the roles.

Related Information

Roles are groupings of system operation permissions. System administrator is the default role of users and has all the permissions. Other roles only have the assigned permissions.

The role of registered VNNOX users is system administrator and cannot be changed.

3.5.1.1 Viewing Roles
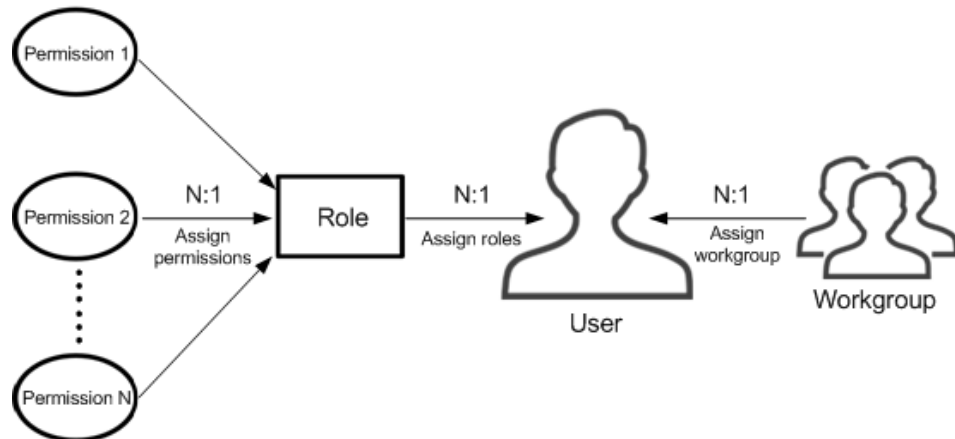
System administrator and sub-users of system administrator can view all the roles.

Step 1 Select **Permission** > **Roles** in the pop-up menu of ⊞ at the top right of the page.

Step 2 View role list, or view a role by searching its name.

Step 3 (Optional) Click a role name in the **Name** column to enter the attribute page of the role.

3.5.1.2 Creating Roles

Step 1 Select **Permission** > **Roles** in the pop-up menu of ⊞ at the top right of the page.

Step 2 Click **New**.

Step 3 Enter a name for the role and click **Ok**.

3.5.1.3 Modifying Role Attributes

Step 1 Select **Permission** > **Roles** in the pop-up menu of ⊞ at the top right of the page.

Step 2 Select a role and click **Attribute**, or click the name of a role.

Step 3 Select one or more permissions, and then click **Save** or **Save&Close**.

3.5.1.4 Deleting Roles

Step 1 Select **Permission** > **Roles** in the pop-up menu of ⊞ at the top right of the page.

Step 2 Select one or more permissions and click **Delete**.

Note: If a role is associated with users, it cannot be deleted.

Step 3 Click **Ok** in the pop-up dialog box.

3.5.2 Workgroups

Application Scenarios

Manage resources in groups to enable data isolation.

Related Information

Workgroups can divide the resources accessible to users. System workgroup is the default workgroup of the VNNOX system.

- The resources of all the workgroups are accessible to system administrators.
- The sub-users of system administrator can access the resources of their workgroup and sub-workgroups, and system workgroup.

3.5.2.1 Viewing Workgroups

System administrator and the sub-users of system administrator can view all the workgroups.

Step 1 Select **Permission** > **Workgroups** in the pop-up menu of ⊞ at the top right of the page.

Step 2 View workgroup tree, or view a workgroup by searching its name.

3.5.2.2 Creating Workgroups

Step 1 Select **Permission** > **Workgroups** in the pop-up menu of ⊞ at the top right of the page.

Step 2 Create a top-level workgroup.

1. Click **New**.
2. Enter a name for the workgroup and click **Ok**.

Step 3 Create a second-level workgroup.

1. Click ✛ next to the name of a top-level workgroup. The **New** button and **Attribute** button appear.
2. Click **New**.
3. Enter a name for the second-level workgroup and click **Ok**.

Step 4 Create a third-level workgroup.

1. Click ✛ next to the name of a second-level workgroup. The **New** button and **Attribute** buttons appear.
2. Click **New**.

3. Enter a name for the third-level workgroup and click **Ok**.

3.5.2.3 Modifying Workgroup Attributes

Step 1 Select **Permission** > **Workgroups** in the pop-up menu of ⊞ at the top right of the page.

Step 2 Click ✛ next to the name of a top-level, second-level or third-level workgroup, and then click **Attribute** to enter the attribute page of the workgroup.

Step 3 Modify workgroup attributes and then click **Save** or **Save&Close**.

3.5.2.4 Deleting Workgroups

Step 1 Select **Permission** > **Workgroups** in the pop-up menu of ⊞ at the top right of the page.

Step 2 Select one or more workgroups and click **Delete**.

Note: System workgroup cannot be deleted.

Step 3 Click **Ok** in the pop-up dialog box.

3.5.3 Users

Application Scenarios

Log in and use the VNNOX system.

Related Information

Users are the people who use the VNNOX system. Assign one or more roles to a user, and the user will have all the permissions of the role(s).

The default role of registered VNNOX users is system administrator. Registered users have all the permissions and can create multiple sub-users.

3.5.3.1 Viewing Users

System administrator can view all the sub-users and the sub-users can only view the users created by themselves.

Step 1 Select **Permission** > **Users** in the pop-up menu of ⊞ at the top right of the page.

Step 2 View the user list, or view a user by searching the user's name.

Step 3 (Optional) Click a username in the **Username** column to enter the attribute page of the user.

3.5.3.2 Creating Users

Step 1 Select **Permission** > **Users** in the pop-up menu of ⊞ at the top right of the page.

Step 2 Click **New**.

Step 3 Set the information related to the user, and then click **Ok**.

3.5.3.3 Modifying User Attributes

Step 1 Select **Permission** > **Users** in the pop-up menu of ▦ at the top right of the page.

Step 2 Select a user and click **Attribute**, or select multiple users and click **Bulk edit**. User attributes are explained in Table 3-2.

Table 3-2 User attributes

Tab Name	Description
Basic Info	Set the basic information of the user, including username, first name, last name, email address, phone number, role and login password. Only role can be set while editing user attributes in batches.
Workgroup	Set the workgroup which the user belongs to. Only one workgroup can be assigned to a user. The user can access the resources of the user's workgroup and sub-workgroups and the resources of system workgroup.
Language Settings	Set the default language for users to log in the system and receive emails.
Other Settings	Set the user status and approve or do not approve all the content of the user. When the user status is **Enable**, the user can log in to and use VNNOX normally. When the user status is **Disable**, the user cannot log in to VNNOX.

Step 3 After the attributes are edited, click **Save** or **Save&Close**.

3.5.3.4 Deleting Users

Step 1 Select **Permission** > **Users** in the pop-up menu of ▦ at the top right of the page.

Step 2 Select one or more users and click **Delete**.

Step 3 Click **Ok** in the pop-up dialog box.

3.6 Media Management

Users upload media, add media to playlists and schedule the playlists. Then a solution is created. The relationship among media, playlist and solution is shown as Figure 3-2.

Figure 3-2 Media management
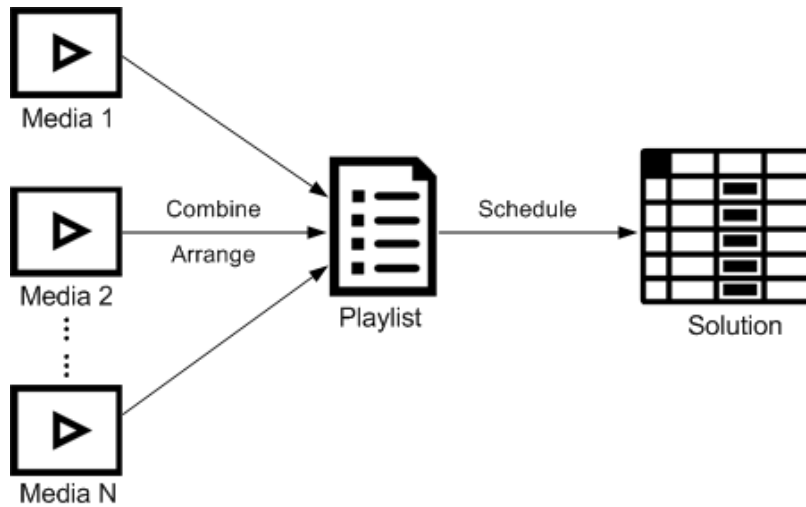
3.6.1 Media

Application Scenarios

A playlist is formed by combining and arranging media items.

Related Information

Media is the smallest unit of a solution.

The types of images, videos and streaming media supported by VNNOX are shown in Table 3-3.

Table 3-3 Media types

Media Type	Synchronous Terminal	Asynchronous Terminal
Image	PNG, JPG, BMP, GIF, JPEG	JPEG, BMP, GIF, PNG, WEBP
Video	MP4, RMVB, AVI	MPEG-1/2, MPEG-4, H.264/AVC, MVC, H.265/HEVC, Google VP8, H.263, VC-1, Motion JPEG
Streaming Media	• HLS, RTMP: Can be previewed online and played. • RTSP: Can be played but cannot be previewed online.	Currently not supported.
Document	Word, Excel, PPT, PDF	

3.6.1.1 Viewing Media

System administrator can view all the media. Sub-users only can view the media of their workgroup and sub-workgroups, and system workgroup.

Step 1 Select **Media Management** > **Media** in the pop-up menu of ▦ at the top right of the page.

Step 2   View the media list, or view a media item by searching its name.

Step 3   (Optional) Select filter criteria in the **Filter** on the left side of the page.

Step 4   (Optional) Click a media name in the **Name** column, and then the attribute page of the media appears.

3.6.1.2 Adding Media

Step 1   Select **Media Management** > **Media** in the pop-up menu of ⊞ at the top right of the page.

Step 2   Click **Add** and select a media type from the drop-down options.

- Upload File: Click **Choose file** to choose media from your local devices and click **Ok**.

- Webpage: Name the webpage and enter its address. Click **Ok**, and the webpage attribute editing page appears.

- RSS: Name the RSS and enter its address. Click **Ok** and the attribute editing page of the RSS appears.

- Page: Enter a name for the page and click **Next**. Select a page template and click **Ok**. Then the attribute editing page appears.

- Streaming Media: Enter the name and address of the streaming media. Click **Ok** and the attribute editing page of the streaming media appears.

3.6.1.3 Editing Pages

A page includes one or more media items and widgets. Media in the page are restricted to the attributes of the page and the attributes of the media doesn't take effect.

Step 1   Select **Media Management** > **Media** in the pop-up menu of ⊞ at the top right of the page.

Step 2   Select a media item the type of which is **Page**, and click **Page Edit**, or click 🖉 next to the name of a page media to enter the **Edit** page, as shown in Figure 3-3. The Edit page is illustrated in Table 3-4.
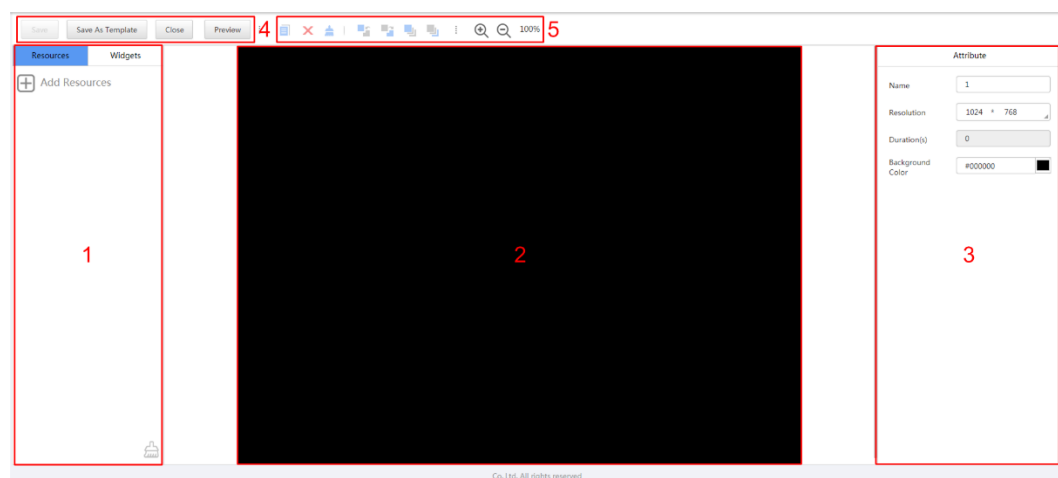
Figure 3-3 The Edit page

Table 3-4 Description of the Edit page

No.	Function	Description
1	Resources and widgets	• Resources: Add media to the resource list. Click 🖌 to clear the resource list. • Widgets: Show all the widgets provided by the system, including small containers, weather, analog clock, digital clock, calendar, syntext, temperature and humidity. Media and other widgets can be added into the small container.
2	Editing the page	Edit contents on the page, including media and widgets.
3	Editing attributes	Click to select the media items and widgets on the page editing area to edit their relevant attributes.
4	Common buttons	Save, close and preview the page, and save the page as a template.
5	Icon buttons	From left to right, the meanings of the icons are as follows: • 🗐: Copy an object • ✕: Delete an object • 🖌: Clear objects • ⬛: Bring forward • ⬛: Send backward • ⬛: Bring to front • ⬛: Send to back • 🔍: Zoom in • 🔍: Zoom out All the operation objects of the above buttons are the media items and widgets in the page editing area. Click and select an object before operation.

Step 3 (Optional) Click **Add Resources** in the **Resources** tab on the left. Select one or more media in the pop-up dialog box and click **Ok**.

Step 4 Drag the media items or widgets on the left side of the page to the editing area.

Step 5 Click to select one media item or widget to edit the attributes and adjust the layout.

Step 6 Click **Save** after the attributes and layout of all the contents on the page are edited.

Step 7 (Optional) Click **Save As Template** to save the page as a template.

Step 8 Click **Close**.

3.6.1.4 Modifying Media Attributes

If a modified media item is added to a playlist and the playlist is added to a solution which is already associated with a player, there will be two cases according to the distribution type after the modified media item is saved:

- Auto distribution: VNNOX distributes the new solution automatically.

- Manual distribution: Users perform following operations to distribute the new solution manually.

  Select **Players Management > Players** in the pop-up menu of ⊞ at the top right of the page. Select the target player and click **Update solution**.

Step 1 Select **Media Management** > **Media** in the pop-up menu of ⊞ at the top right of the page.

Step 2 Select one media item and click **Attribute**, or select more media items and click **Bulk edit**. Media attributes are explained in Table 3-5.

Table 3-5 Media Attributes

Tab Name	Description
Basic Info	Set the basic information of the media, such as description, validity, category, etc. Only this tab appears while editing media in batches. Expired media cannot be played. Subscriptions will be refreshed automatically according to the **RSS refresh period(s)**. When the media type is document, you also need to set the duration and effect of each page of the document.
Workgroup	View the workgroup of the media.
Approval	Approve, request for approval or refuse media. In **Organization Management** > **System Management**, set the parameter **Enable media items approval** to **Yes**, then this tab appears. Approved media can be distributed while refused media cannot be distributed.
Media Info	View the size and dimension of images, size and duration of videos, or size, dimension and number of pages of documents. This tab appears when the media type is image, video or document.
History	View the history information of images and videos. This tab appears when the media type is image or video.
Preview	Preview images, videos, streaming media, or documents. This tab appears when the media type is image, video, streaming media, or document.

Step 3 After attributes are edited, click **Save** or **Save& Close**.

3.6.1.5 Adding Media to Playlists

Step 1 Select **Media Management** > **Media** in the pop-up menu of ⊞ at the top right of the page.

Step 2 Select one or more media, then click **Add to Playlist**.

Step 3 Select a playlist in the pop-up dialog box and click **Ok**.

3.6.1.6 Deleting Media

Step 1   Select **Media Management** > **Media** in the pop-up menu of ⊞ at the top right of the page.

Step 2   Select one or more media and click **Delete**.

Step 3   Click **Ok**.

3.6.2 Playlists

Application Scenarios

A solution is formed by scheduling playlists.

Related Information

A playlist is a collection of sequenced media.

A playlist can be used as a sub-playlist. For example, after playlist B is added to playlist A, playlist B is the sub-playlist of playlist A. Sub-playlists make media playback more flexible and diversified. Special playback requirements can be simply satisfied without the need to create complex playlists.

If playlist A contains three media items: media m1, sub-playlist B and media m2, and the sub-playlist B contains two media items: m3 and m4, the items in playlist A will be played according to m1 > m3 > m2 in the first round and m1 > m4 > m2 in the second round. Then, playlist A will be played repeatedly until the end time.

If a playlist is to be used as a sub-playlist, it must meet the following requirements:

- It cannot contain media of page type.
- It cannot contain sub-playlists.

3.6.2.1 Viewing Playlists

System administrator can view all the playlists. Sub-users can view the playlists of their workgroups and sub-workgroups, and system workgroup.

Step 1   Select **Media Management** > **Playlists** in the pop-up menu of ⊞ at the top right of the page.

Step 2   View playlists, or view a playlist by searching its name.

Step 3   (Optional) Select filter criteria in the **Filter** on the left side of the page.

Step 4   (Optional) Click a playlist name in the **Name** column and the attribute page of the playlist appears.

3.6.2.2 Creating Playlists

Step 1   Select **Media Management** > **Playlists** in the pop-up menu of ⊞ at the top right of the page.

Step 2   Perform any of the following operations to create a playlist.

- Click **New**. Enter a name for the playlist and specify one or more categories, then click **Ok**.

- Select a playlist and click **Copy**. Enter a name for the copied playlist and click **Ok**.

Note: Categories are used for quickly filtering out playlists through the filter.

3.6.2.3 Modifying Playlist Attributes

If a modified playlist is added to a solution which is already associated with a player, there will be two cases according to distribution type after the modified playlist is saved.

- Auto distribution: VNNOX distributes the new solution automatically.
- Manual distribution: Users perform following operations to distribute the new solution manually.

    Select **Players Management** > **Players** in the pop-up menu of ⊞ at the top right of the page. Select the target player in player column and click **Update solution**.

Step 1 Select **Players Management** > **Playlists** in the pop-up menu of ⊞ at the top right of the page.

Step 2 Select a playlist and click **Attribute**, or select more playlists and click **Bulk edit**. The playlist attributes is explained in Table 3-6.

Table 3-6 Playlist attributes

Tab Name	Description
Basic Info	Set the basic information of playlists, such as description, duration, category, etc. Only this tab appears while editing attributes in batches.
Workgroup	● System administrator: Set the workgroup that a playlist belongs to. ● Other users: View the workgroup that a playlist belongs to.
History	Show the operation history of playlists.
Media Item	Perform the following operations, and filter or search for media items. ● Add media: Add one or more media to the current playlist. ● Add sub-playlist: Add one or more sub-playlists to the current playlist. ● Attribute/Bulk edit: Set the basic information and play plan of media items. ● Delete: Delete media items in a playlist. ● Copy: Copy a media item according to the specified number of times. ● Move: Move up or down a media item in the playlist. Media items are played according to the order in the playlist from the top to bottom. ● Statistics: Statistics of the number, duration and play count of media items in the playlist. ● Replace media item: Replace one or more media items in the media item list with a specified media. ● Open playlist item: Enter the attribute page of a specified media item

Tab Name	Description
	to view related information. Save the modifications to a playlist before operation.
	● View sub-playlist: Go to the attribute page of a specific sub-playlist to view the relevant information. Save the modifications to the playlist before the operation.

Step 3   After attributes are edited, click **Save** or **Save&Close**.

3.6.2.4 Deleting Playlists

Step 1   Select **Players Management** > **Playlists** in the pop-up menu of ⊞ at the top right of the page.

Step 2   Select one or more playlists and click **Delete**.

Step 3   Click **Ok** in the pop-up dialog box.

3.6.3 Solutions

Application Scenarios

After being associated in player attributes, solutions are distributed through VNNOX manually or automatically.

Related Information

A solution is a collection of scheduled playlists.

3.6.3.1 Viewing Solutions

System administrator can view all the solutions. Sub-users can view the solutions of their workgroups and sub-workgroups, and system workgroup.

Step 1   Select **Players Management** > **Solution** in the pop-up menu of ⊞ at the top right of the page.

Step 2   View the solution list, or view a solution by searching its name.

Step 3   (Optional) Select filter criteria in the **Filter** on the left side of the page.

Step 4   (Optional) Click a solution name in the **Name** column to enter the attribute page of the solution.

3.6.3.2 Creating Solutions

Step 1   Select **Players Management** > **Solution** in the pop-up menu of ⊞ at the top right of the page.

Step 2   Perform any of the following operations to create a solution.

● Click **New**. Enter a name for the solution and set its categories, and then click **Next**. Choose a frame template and click **Ok**.

● Select a solution and click **Copy**. Enter a name for the copied solution and click **Ok**.

Note: Frame templates can be filtered out through the filter on the left side of the **Choose Frames** dialog box according to the specified number framesets.

3.6.3.3 Modifying Solution Attributes

If a modified solution is associated with players, there will be following two cases according to the distribution type after the modified solution is saved.

- Auto distribution: VNNOX distributes the new solution automatically.

- Manual distribution: Users perform following operations to distribute the new solution manually.

  Select **Players Management** > **Players** in the pop-up menu of ⊞ at the top right of the page. Select the target player in player column and click **Update solution**.

Step 1 Select **Media Management** > **Solution** in the pop-up menu of ⊞ at the top right of the page.

Step 2 Select a solution and click **Attribute**, or select more solutions and click **Bulk edit**. The solution attributes is explained in Table 3-7.

Table 3-7   Solution attributes

Tab Name	Description
Basic Info	Set the name and description of a solution. Only the description can be set while editing solutions in batches.
Workgroup	View the workgroup of the solution.
Frame	Set screen size and frame. If there are two or more framesets, following three buttons will appear in the **Operate** column. • ⬆ : Set the priority to a higher level. • ⬇ : Set the priority to a lower level. • ✖ : Delete the frameset. A frameset with lower priority is overlaid by a frameset with higher priority.
Solution Settings	Set solution schedules and insertions. See detailed operation in 3.6.3.4 "Setting Solution Schedules" and 3.6.3.5 "Setting Solution Insertion".

Step 3 After the attributes are edited, click **Save** or **Save&Close**.

3.6.3.4 Setting Solution Schedules

If a solution contains many framesets, it will be required to schedule each frameset respectively.

Step 1 Select **Media Management** > **Solution** in the pop-up menu of ⊞ at the top right of the page.

Step 2 Select a solution and click **Attribute**. The **week** timetable on the **Schedule** page under the **Solution Settings** tab is displayed by default. Assume that the solution only have one frameset, as shown in Figure 3-4. Description of the page is shown in Table 3-8.

Figure 3-4 Schedule
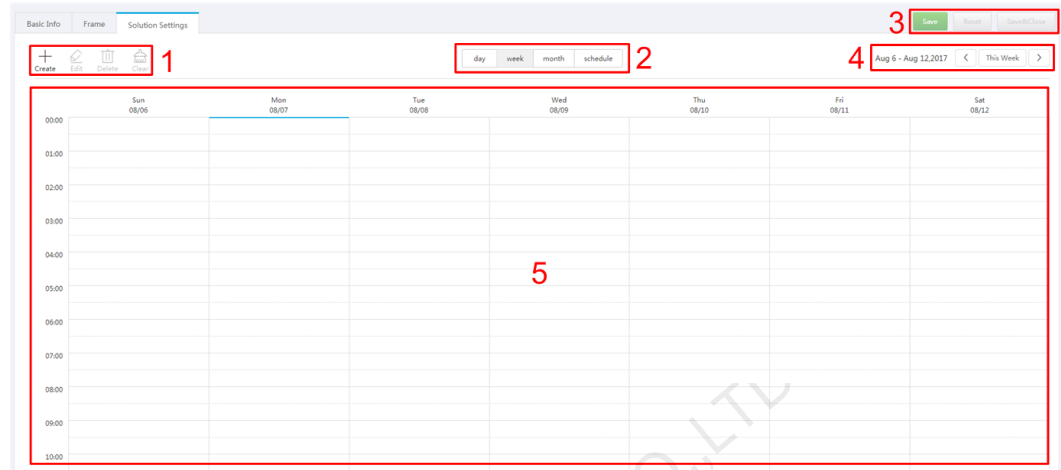
Table 3-8 Description of the Solution Settings tab

No	Function	Description
1	Schedule buttons	• Create: Click this button, and the **Create** dialog box appears. • Edit: Select a schedule in the timetable and click this button. Then the **Edit** dialog box appears. • Delete: Select a schedule in the timetable and click this button to delete the schedule. • Clear: Click this button to clear schedules.
2	Date buttons	• Day: Show the timetable in day view. • Week: Show the timetable in week view. • Month: Show the timetable in month view. • Schedule: List schedules and the media contained in each schedule.
3	Common buttons	• Save: Save configuration. • Reset: Restore configuration. • Save&Close: Save configuration and close the attribute page.
4	Date switching buttons	• ⟨ : Switch to a previous date by day, week or month. • ⟩ : Switch to a subsequent date by day, week or month. • Today: Switch the timetable to the current day. • This Week: Switch the timetable to the current week. • This Month: Switch the timetable to the current month.

No	Function	Description
5	Schedules	The timetable is shown in **week** view by default.

Step 3 Click **day**, **week** or **month** to enter relevant timetables. Perform any of the following operations to create a solution.

- Click **Create**.
- Click a cell in the timetable and click ✚. Each cell of the timetable in **day** and **week** views stands for one hour, while in month view stands for one day.

Step 4 Select a playlist in the **Playlist** tab of the **Create** dialog.

Step 5 Select the **Play plan** tab and set play duration and date or play duration and period.

- When the **Repeat** is set to **Not repeating**, the solution can be played normally according to the plan if the date is set to the current day or any day within 7 days after the current day. The solution will not be played if the date is set to other days.
- If the **Repeat** is set to **Every day**, **Weekly**, **Per month** or **Per year**, the solution will be played repeatedly according to the period you set.

Step 6 Select the **Option** tab and set the schedule color shown in the timetable.

Step 7 After the configuration is done, click **Ok**. The schedule is graphically shown in the timetable.

For the timetable in **day** and **week** views, the schedules will be shown side by side in the timetable if the schedules have overlapped timeslot. In Figure 3-5, three schedules in the **week** timetable are taken as an example. The VNNOX supports following operations on the schedules:

- Drag the top and bottom edges of a schedule to modify its timeslot.
- Drag a schedule to any position of the date when the schedule will be played to modify the timeslot.
- Drag the schedules to modify the playback priority order during the overlapped timeslot, for example, the priority order of the three playlists in Figure 3-5 is: **Playlist3** > **Playlist2** > **Playlist3**. After the playback of **Playlist2** is over, **Playlist3** will be played from the beginning. **Playlist1** will not be played.
- Double click a schedule and the **Edit** dialog box appears.

Figure 3-5 There is overlapped timeslot
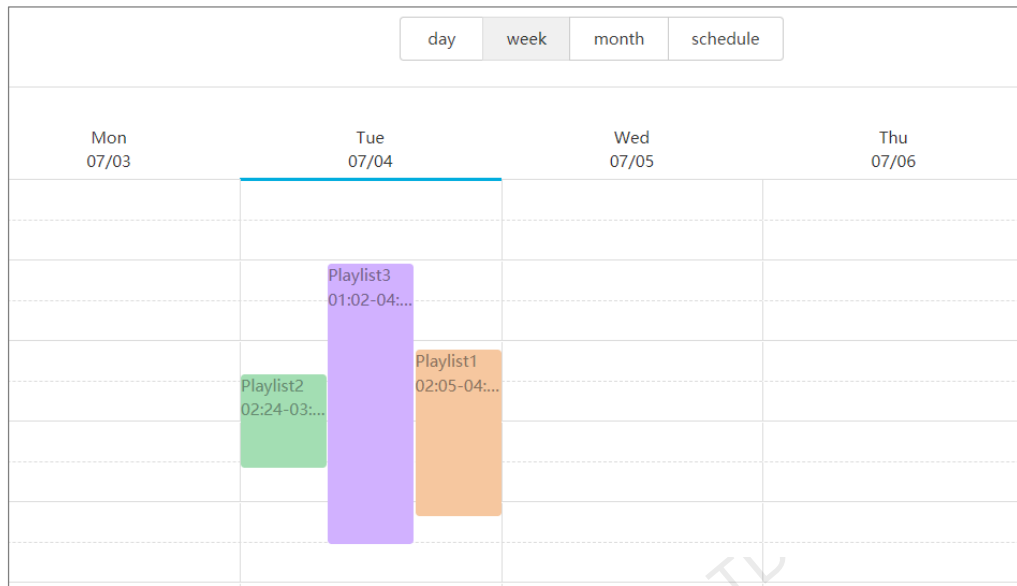
Drag the three schedules in Figure 3-5 until there is no overlapped timeslot. Then the schedules is shown as Figure 3-6.

Figure 3-6 There is no overlapped timeslot
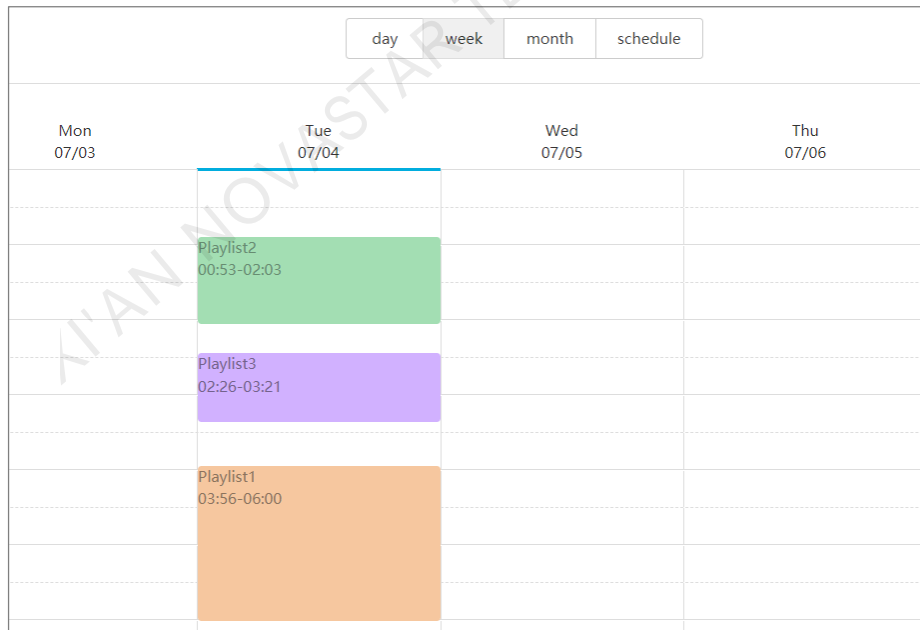
3.6.3.5 Setting Solution Insertion

The operating procedures described in this section are the steps to create an insertion. In addition, the system also offers the following functions:

- Modifying insertion attributes: Allows you to modify the basic information, playlist and playback plan of an insertion.

- Schedule statistics: Allows you to get the schedule statistics of an insertion.

●   Deleting insertions: Allows you to delete insertions.

A solution will stop playing when an insertion begins playing. When playing of the insertion ends, the solution will continue playing from where it stopped.
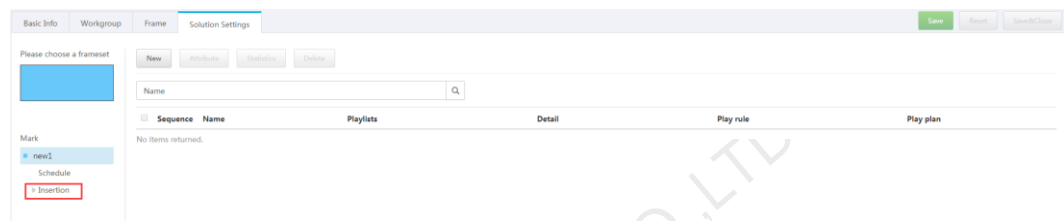
Step 1   Select **Media Management** > **Solution** in the pop-up menu of ▦ at the top right of the page.

Step 2   Select a solution and click **Attribute**. The **week** timetable on the **Schedule** page under the **Solution Settings** tab is displayed by default.

Step 3   On the left of the page, click **Insertion**. For example, if a solution has only one frameset, the page shown in Figure 3-7 will be displayed.

Figure 3-7 Insertion

Step 4   Click **New** and perform any of the following operations.

●   **Create**: Create an insertion.
1.   Enter a name for the new insertion and click **Next**.
2.   Choose a playlist and click **Next**.
3.   Set the insertion plan and click **Done**.

●   **Choosing existing**: Copy an existing insertion.
1.   Choose an existing insertion and click **Next**.
2.   Enter a name for the insertion and click **Done**.

Step 5   Click **Save** or **Save&Close**.

3.6.3.6 Deleting Solutions

Step 1   Select **Media Management** > **Solution** in the pop-up menu of ▦ at the top right of the page.

Step 2   Select one or more solutions and click **Delete**.

Step 3   Click **Ok** in the pop-up dialog box.

3.6.4 Categories

Application Scenarios

Sort media, playlists and play logs in order to quickly filter out and find them.

Related Information

Media, playlists and play logs are sorted by categories. Objects can be filtered out by the filter according to specified categories.

Multiple categories can be assigned to a media, playlist or play log.

3.6.4.1 Viewing Categories

System administrator and the sub-users of system administrator can view all categories.

Step 1 Select **Media Management** > **Solution** in the pop-up menu of at the top right of the page.

Step 2 View category list, or view a category by searching its name.

3.6.4.2 Creating Categories

Step 1 Select **Media Management** > **Category** in the pop-up menu of at the top right of the page.

Step 2 Click **New**.

Step 3 Enter a name for the category and click **Ok**.

3.6.4.3 Modifying Category Attributes

Step 1 Select **Media Management** > **Category** in the pop-up menu of at the top right of the page.

Step 2 Select a category and click **Attribute** to enter the attribute page of the category.

Step 3 Modify category attributes and then click **Save** or **Save&Close**.

3.6.4.4 Deleting Categories

Step 1 Select **Media Management** > **Category** in the pop-up menu of at the top right of the page.

Step 2 Select one or more categories and click **Delete**.

Step 3 Click **Ok** in the pop-up dialog box.

3.7 Playlist Management

3.7.1 Frames

Application Scenarios

It is required to choose a frame template while creating a solution.

Related Information

Frame is the layout of windows displayed on LED screen. The screen is split into different areas. The playback of each area is according to the play plan and content set in the solution.

Required templates can be filtered out by the specified number of framesets through the filter on the left side of the page.

Only one frame template can be selected for each solution.

3.7.1.1 Viewing Frame Templates

System administrator and the sub-users of system administrator can view all the templates.

Step 1   Select **Playlists Management** > **Frame** in the pop-up menu of ⊞ at the top right of the page.

Step 2   View frame template list, or view a template by searching its name.

Step 3   (Optional) Select filter criteria in the **Filter** on the left side of the page.

Step 4   (Optional) Click a template name in the **Name** column, and the attribute page of the frame template appears.

3.7.1.2 Creating Frame Templates

Step 1   Select **Playlists Management** > **Frame** in the pop-up menu of ⊞ at the top right of the page.

Step 2   Click **New**.

Step 3   Enter a name for the template and click **Ok**.

3.7.1.3 Modifying Frame Template Attributes

Step 1   Select **Playlists Management** > **Frame** in the pop-up menu of ⊞ at the top right of the page.

Step 2   Select a template and click **Attribute**.

Step 3   Set screen size and frameset, and then click **Save** or **Save&Close**.

The frameset named **main** is generated by default. The positions of framesets from the top to bottom in the frameset list are corresponding to the priority order of the framesets from higher to lower level in the playback window.

3.7.1.4 Deleting Frame Templates

Step 1   Select **Playlists Management** > **Frame** in the pop-up menu of ⊞ at the top right of the page.

Step 2   Select one or more frame templates and click **Delete**.

Step 3   Click **Ok** in the pop-up dialog box.

3.7.2 Page Templates

Application Scenarios

Page templates are required while creating the media of the **Page** type.

Related Information

A page template is the template of page media. Media items and widgets can be added to templates.

3.7.2.1 Viewing Page Templates

System administrator and the sub-users of system administrator can view all the page templates.

Step 1 Select **Playlists Management** > **Page Template** in the pop-up menu of ⊞ at the top right of the page.

Step 2 Perform any of the following operations to view page templates.

- View page template list.
- View a page template by searching its name.
- Select template resolution to view all the templates with a specific size.

Step 3 (Optional) Select a page template and click **Now Use**, and then the dialog box of the new page appears.

3.7.2.2 Creating Page Templates

Step 1 Select **Playlists Management** > **Page Template** in the pop-up menu of ⊞ at the top right of the page.

Step 2 Perform any of the following operations to create a page template.

- Click **New**. Enter a name for the page template and click **Ok**.
- Click to select a page template and click **Copy**. Enter a name for the copied template and click **Ok**.

3.7.2.3 Editing Page Templates

Step 1 Select **Playlists Management** > **Page Template** in the pop-up menu of ⊞ at the top right of the page.

Step 2 Click to select a page template and click **Edit**. The **Edit** page is shown as Figure 3-8. The page is explained in Table 3-9.
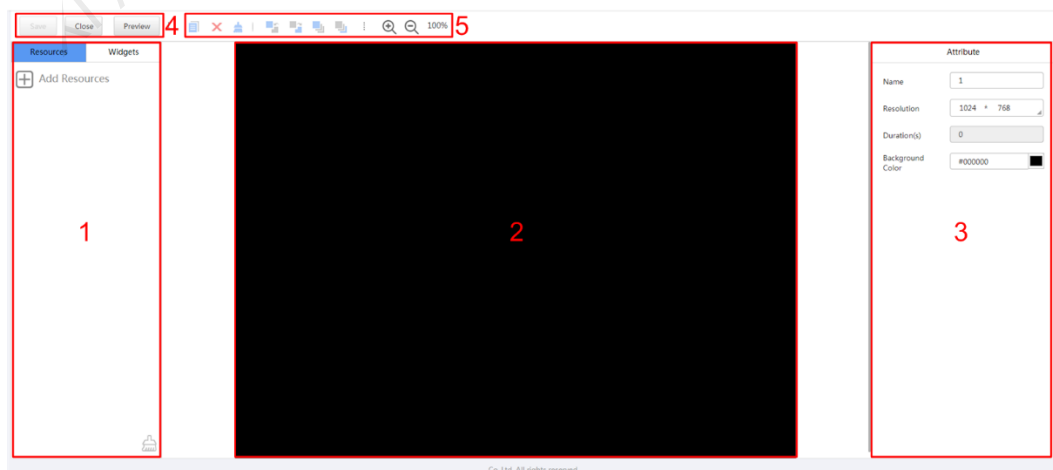
Figure 3-8 The Edit page of a page template

Table 3-9 Description of the Edit page

No.	Function	Description
1	Resources and widgets	• Resources: Add media to the resource list. Click 🧹 to clear the resource list. • Widgets: Show all the widgets provided by the system, including small containers, weather, analog clock, digital clock, calendar, syntext, temperature and humidity. Media and other widgets can be added into the small container.
2	Editing the page	When adding resources or widgets, click and select an object, then drag it to the target location.
3	Editing attributes	Click and select the media and widgets in the page editing area to edit their relevant attributes.
4	Common buttons	Save, close and preview pages.
5	Icon buttons	From left to right, the meanings of the icons are as follows: • 📋: Copy an object • ✖: Delete an object • 🧹 : Clear objects • ▣: Send forward • ▣: Bring backward • ▣: Send to front • ▣: Bring to back • 🔍: Zoom in • 🔍: Zoom out All the operation objects of the above buttons are the media and widgets in the page editing area. Click and select an object before operating.

Step 3　After a page template is edited, click **Save**.

Step 4　Click **Close**.

3.7.2.4 Deleting Page Templates

Step 1　Select **Playlists Management** > **Page Template** in the pop-up menu of 🔲 at the top right of the page.

Step 2　Click to select one or more page templates and click **Delete**.

Step 3　Click **Ok** in the pop-up dialog box.

3.8 Player Management

3.8.1 Players

Application Scenarios

Terminal players bind the players on VNNOX and transmit information to VNNOX through the players.

Related Information

Players, including synchronous players and asynchronous players, are tools for information transmission between VNNOX and synchronous and asynchronous terminals.

Solutions can be distributed and played when players meet the requirements in Table 3-10.

Table 3-10 Requirements for a players

Requirements	Description
Associated valid licenses	Available licenses are shown in the drop-down options of **Associated license**. Licenses associated with other players or expired licenses are not shown.
	After successful association, license number and valid period are shown in the **Player License** column of the player list.
Bound to terminal players	Terminal players include VNNOX player and ViPlex.
	Synchronous terminals bind synchronous players through VNNOX player. Asynchronous terminals bind asynchronous players through ViPlex.
Associated with solutions and media in the solutions can be played normally	Players must be bound before associating solutions.

3.8.1.1 Viewing Players

System administrator can view all the players. Sub-users can only view the players of their workgroups and sub-workgroups as well as system workgroup.

Step 1 Select **Players Management** > **Players** in the pop-up menu of 🔲 at the top right of the page.

Step 2 View the player list, or view a player by searching its name.

Step 3 (Optional) Select filter criteria in the **Filter** on the left side of the page.

Step 4 (Optional) Click a player name in the **Name** column to enter the attribute page of the player.

3.8.1.2 Creating Players

Players cannot be created if there is no available licenses. If you want to view licenses, see 3.9.1 "Viewing Licenses".

Step 1 Select **Players Management** > **Players** in the pop-up menu of ⊞ at the top right of the page.

Step 2 Click **New**.

Step 3 Select synchronous player or asynchronous player and click **Next**.

- Synchronous player: Used by synchronous terminals and bound on VNNOX Player.
- Asynchronous player: Used by asynchronous terminals and bound on ViPlex.

Step 4 Enter a name for the player, associate a license, set the solution distribution type and the categories of the player, and then click **Ok**.

Currently available licenses are shown in the drop-down options of **Associated license**. Licenses associated with other players or expired licenses are not shown. After successful association, license number and valid period are shown in the **Player License** column of the player list.

Meanings of the distribution types are shown as follows:

- Manual: After a solution is bound to players or is modified, users need to click **Update solution** in the player list page to distribute the solution manually.
- Auto: After a solution is bound to players or is modified, VNNOX will distribute the solution automatically without the need for any operation.

3.8.1.3 Modifying Player Attributes

Step 1 Select **Players Management** > **Players** in the pop-up menu of ⊞ at the top right of the page.

Step 2 Select a player and click **Attribute**, or select multiple players and click **Bulk edit**. The player attributes is explained in Table 3-11.

Table 3-11 Player attributes

Tab Name	Description
Basic Info	Set player name, description and distribution type, enable or disable player, and associate licenses and solutions.
	Meanings of the distribution types:
	• Manual: After a solution is bound to players or is modified, users need to click **Update solution** in the player list page to distribute the solution manually.
	• Auto: After a solution is bound to players or modified, VNNOX will distribute the solution automatically without the need for any operation.
	Currently available licenses are shown in the drop-down options of **Associated license**.
	Bind players on VNNOX Player (synchronous terminal) or ViPlex (asynchronous terminal), and then solutions can be associated.

Tab Name	Description
	You can perform the following operations while editing the attributes of multiple players. ● Modify player description. ● Modify the solution distribution type. ● Enable or disable players. ● Modify the solutions associated to players.
Workgroup	Show the workgroup of current player.
The remote control plan	Set remote control plan to enable non-real-time remote control of synchronous or asynchronous terminals. If it is required to control in real time, the **Real-time control** function in the player list page can be used. This tab appears only when players are bound through VNNOX Player (synchronous terminal) or ViPlex (asynchronous terminal). VNNOX Player must be V1.2.0 or above. Remote control plans can be created in **Players Management** > **Remote Control Plan**. After the player is bound or remote control plans are updated, VNNOX will distribute the plans to corresponding synchronous terminal or asynchronous terminal. Operation types of remote control plan: ● Synchronous terminal: Restart and switch on or off displays. ● Asynchronous terminal: Restart, switch on or off displays and switch between synchronous mode and asynchronous mode.
Status	Show the status and identity of the player, and disk space status. The information relevant to the terminal player and host will be shown at the same time if the player is bound. Click **Quick Cleanup** to delete the media which are not relevant to the solution associated to the player. Click **Remove Binding** and **Ok** to unbind a player from the terminal player (VNNOX Player or ViPlex). You can unbind terminals in bulk while editing the attributes of multiple players.
The status of media downloaded	Show the download status of media.
The remote control history	Show the execution history of remote control plans. This tab appears only when players are bound on VNNOX Player (synchronous terminal) or ViPlex (asynchronous terminal). VNNOX Player must be V1.2.0 or above.
Position	Set the location of terminal players, including address, longitude and latitude. Baidu and Google maps are supported. Map settings:

Tab Name	Description
	● Manual: Click a place on the map or drag ![]. ● Auto: Click **Auto Position**. The player must be bound before operation. If the **Address Set** in weather widget attributes is set to **Follow the players**, weather information will be shown according to the location of terminal players.

Step 3 After the attributes are edited, click **Save** or **Save&Close**.

3.8.1.4 Deleting Players

Step 1 Select **Players Management** > **Players** in the pop-up menu of ⊞ at the top right of the page.

Step 2 Select one or more players and click **Delete**.

Step 3 Click **Ok** in the pop-up dialog box.

3.8.1.5 Associating Solutions

After being bound by synchronous and asynchronous terminals, players can associate solutions. After successful association, solutions will be distributed manually or automatically through VNNOX. After being downloaded by terminal players, solutions will be played according to the play plan.

Step 1 Select **Players Management** > **Players** in the pop-up menu of ⊞ at the top right of the page.

Step 2 Enter player attribute page.

- For a single player: Select a player and click **Attribute**, or click the player name.
- For multiple players: Select the players and click **Bulk edit**.

Step 3 Choose a solution from the drop-down options of the parameter **associate solution**.

Step 4 Distribution type of the solution is **Manual** or not.

- Yes. Click **Save&Close** to return to the player list page. Select the target player and click **Update solution**.
- No. Click **Save** or **Save&Close**.

3.8.1.6 Remotely Controlling Terminals in Real Time

Real-time remote control can be used for controlling synchronous and asynchronous terminals in real time. Terminals need to bind players before operation.

- Synchronous terminal: Operation types include restarting, switching on or off displays, enabling or disabling synchronous playing, and upgrading the VNNOX Player.
- Asynchronous terminal: Operation types include restarting, switching on or off displays, enabling or disabling synchronous playing, switching between synchronous mode and asynchronous mode, upgrading software and system.

You can also click the **Please upgrade** link in the **Version** column of the player list to upgrade terminal players.

Step 1   Select **Players Management** > **Players** in the pop-up menu of ⊞ at the top right of the page.

Step 2   Select the target player, click **Real-time control** and choose an operation from the drop-down options.

3.8.1.7 Cleaning up Media

Users can view the disk space status of terminals on the attribute page of a player, and can clean up media if there is not enough available space.

If VNNOX detects that there is not enough available space while distributing solutions, a dialog box will be displayed, reminding users to clean up media.

- For synchronous terminals, the media which are not relevant to the solution being played currently can be deleted.
- For asynchronous terminals, all the media can be deleted, and users will see a black screen if one of the media is being played.

Step 1   Select **Players Management** > **Players** in the pop-up menu of ⊞ at the top right of the page.

Step 2   Select a player and click **Attribute**, or click the player name to enter the attribute page of the player.

Step 3   Click the **Status** tab.

Step 4   Click **Quick Cleanup** to delete the media which are not relevant to the solution associated to the player.

3.8.2 Play Logs

Application Scenarios

Users view playback information related to players.

Related Information

Play logs record related playback information including general and detailed information.

- General: General description of the media playback records, and statistics of the total playback hours and times of the media within the filtering range.
- Detail: Detailed records of the playback of media and statistics of total playback hours and times of the media item within the filtering range.

System doesn't support viewing the play log of the current day.

Viewing Play Logs

System administrator can view all the play logs while the sub-users of system administrator can only view the play logs of their workgroups and sub-workgroups, and system workgroup.

Step 1   Select **Players Management** > **Player Log** in the pop-up menu of ⊞ at the top right of the page.

Step 2 Set search criteria and click **Search**.

- Date range: This is the first-level criteria and also a required parameter. It is used for specifying a timeslot. Data range cannot be more than 30 days and the date cannot be set to the current day.
- Category: This is the second-level criteria and an optional parameter. Category is used for specify one or more categories.
- Player: This is the second-level criteria and also an optional parameter. Only one player can be specified.

Step 3 Select the **General** or **Detail** tab to view general or detailed information of play logs.

Step 4 (Optional) Click **Export** to save play logs to the local device.

3.8.3 Remote Control Plans

Application Scenarios

After associating remote control plans in player attribute page, VNNOX will control displays through the plans remotely.

Related Information

Remote control plans can enable non-real-time remote control of displays through VNNOX. After players are bound by synchronous or asynchronous terminals, remote control plans can be associated in attributes. After successful association, VNNOX will distribute the plans to the terminals accordingly.

Operation types of remote control plan:

- Synchronous terminal: Restart and switch on or off displays.
- Asynchronous terminal: Restart, switch on or off displays and switch between synchronous mode and asynchronous mode.

3.8.3.1 Viewing Remote Control Plans

System administrator and the sub-users of system administrator can view all the remote control plans.

Step 1 Select **Players Management** > **Remote Control Plan** in the pop-up menu of 🔲 at the top right of the page.

Step 2 View remote control plan list, or view a remote control plan by searching its name.

Step 3 (Optional) Click a plan name in the **Plan name** column to enter the attribute page of the remote control plan.

3.8.3.2 Creating Remote Control Plans

Step 1 Select **Players Management** > **Remote Control Plan** in the pop-up menu of 🔲 at the top right of the page.

Step 2 Perform any of the following operations to create a remote control plan.

- Click **New**. Enter a name for the plan and choose plan type, then click **Ok**.
- Select a remote control plan and click **Copy**. Enter a name for the copied plan and click **Ok**.

3.8.3.3 Modifying Remote Control Plans

If a modified remote control plan is associated with players, VNNOX will automatically distribute the new remote control plan to the relevant synchronous or asynchronous terminals after the modified plan is saved.

Step 1 Select **Players Management** > **Remote Control Plan** in the pop-up menu of at the top right of the page.

Step 2 Select a remote control plan and click **Attribute**, or click a plan name. The attributes of remote control plans are explained in Table 3-12.

Table 3-12 Remote control plan attributes

Tab Name	Description
Basic Info	Set the name and description of the remote control plan.
Command plan	Set the commands in remote control plans. ● Add commands: Click **Add** to set command type and execution plan, and then click **Ok**. The command type is according to the plan type you select while creating a plan. ● Edit commands: Select a command and click **Edit**. Modify command type and execution plan, then click **Ok**. ● Delete commands: Select one or more commands and click **Delete**. Click **Ok** in the pop-up dialog box.

Step 3 After the attributes are edited, click **Save** or **Save&Close**.

3.8.3.4 Deleting Remote Control Plans

Step 1 Select **Players Management** > **Remote Control Plan** in the pop-up menu of at the top right of the page.

Step 2 Select one or more remote control plans and click **Delete**.

Step 3 Click **Ok** in the pop-up dialog box.

3.8.4 Time Synchronization

Application Scenarios

Synchronize the time of synchronous terminals and asynchronous terminals.

Related Information

Time synchronization is to synchronize the time of synchronous terminals and asynchronous terminals. Users can choose NTP or Lora for time synchronization according to actual condition.

● NTP: Synchronize the time of synchronous and asynchronous terminals according to NTP server. No hardware is needed. But the accuracy of time synchronization depends on the Internet speed and data will be needed if you use 4G network for time synchronization.

- Lora: Used by asynchronous terminals only. It is required to set master and slave devices. The time of slave device is synchronized with the master device (reference device) via Lora network. According to actual needs, the time of master device can be synchronized via NTP server. It is needed to buy Lora devices. This is suitable for scenarios highly demanding time synchronization. No data will be needed. But the signal reception depends on environment and is limited by distance.

3.8.4.1 Viewing Time Synchronous Tasks

System administrator can view all the time synchronization tasks and sub-users can view the tasks of their workgroups and sub-workgroups, and system workgroup.

Step 1 Select **Players Management** > **Time Synchronization** in the pop-up menu of ⊞ at the top right of the page.

Step 2 View all the time synchronization tasks created by the current user, or view a task by searching its name.

Step 3 (Optional) Click a time synchronous task name in the **Name** column to enter the attribute page of the task.

3.8.4.2 Creating Time Synchronous Tasks

Step 1 Select **Players Management** > **Time Synchronization** in the pop-up menu of ⊞ at the top right of the page.

Step 2 (Optional) Click **NTP server configuration** to configure the information of NTP server and then click **Save&Close**.

Step 3 Click **New**.

Step 4 Enter a name for the task, choose time synchronization mode and then click **Next**.

- NTP: Choose NTP server and click **Ok**.
- LORA: Choose a reference device for time synchronization and click **Ok**. Lora mode is only valid for asynchronous players.

3.8.4.3 Modifying Time Synchronization Task Attributes

Step 1 Select **Players Management** > **Time Synchronization** in the pop-up menu of ⊞ at the top right of the page.

Step 2 Select a time synchronization task and click **Attribute**, or click a task name. Time synchronization task attributes are explained in Table 3-13.

Table 3-13 Time synchronization task attributes

Tab Name	Description
Basic Info	Set the name and description of the time synchronization task.
Workgroups	Show the workgroup of the time synchronization task.
Configure	• NTP: Choose NTP server. • Lora: Choose a reference device for time synchronization. If the time of the reference device is synchronized via NTP server, set **NTP** to **Yes** and choose NTP server.

Tab Name	Description
Players	Add or delete the players contained in the time synchronization task.

Step 3 After the attributes are edited, click **Save** or **Save&Close**.

3.8.4.4 Deleting Time Synchronization Tasks

Step 1 Select **Players Management** > **Time Synchronization** in the pop-up menu of ▦ at the top right of the page.

Step 2 Select one or more time synchronization tasks and click **Delete**.

Step 3 Click **Ok** in the pop-up dialog box.

3.9 License Management

Application Scenarios

A player will be available after associating a license.

Related Information

Licenses are the permissions to use players. With the coming of license management function, VNNOX automatically assigns 5 free licenses for both new and older users and associates the free licenses of old users with their players. Free licenses are valid for one month, Users can renew the licenses before they are expired, or buy new licenses.

3.9.1 Viewing Licenses

System administrator and the sub-users of system administrator can view all the licenses.

Step 1 Click 👤 admin ▾ at the top right of the page and select **My License** from the drop-down options.

Step 2 View license list or view relevant licenses by searching key words.

Step 3 (Optional) Click a player name in the **Service Condition** column to enter the attribute page of the player that associates the license.
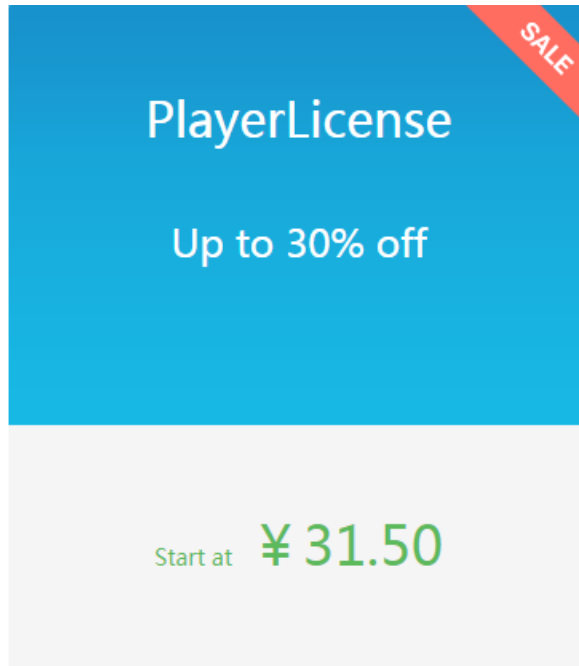
3.9.2 Buying Licenses

Step 1 Perform any of the following operations to enter the **Mall** page.

- Click 🛍 at the top right of the page.
- Click 👤 admin ▾ at the top right of the page and select **My License** from the drop-down options. Click **To Buy** in the **My License** page.

Step 2 Click on any place in Figure 3-9 to enter the page for buying licenses.

Figure 3-9 Buy License

Step 3   Select information related to the license and click **Buy It Now**.

Step 4   Enter contact information. Click **Submit Order** after the order is confirmed.

After successful operation, our staff will contact you for the payment within 2 working days.

Step 5   Perform any of the following operations according to your actual needs.

- Click **Return to mall** to return to the mall.
- Click **View orders** to enter the **Order History** page.

3.9.3 Renewing Licenses

Step 1   Click [admin] at the top right of the page and choose **My License**.

Step 2   Perform any of the following operations to enter the license renewal page.

- Select one or more licenses and click **Renew**.
- Click a license number.

Step 3   Set required information and click **Submit Order**.

After successful operation, our staff will contact you for the payment within 2 working days.

Step 4   Perform any of the following operations according to your actual needs.

- Click **Return to license list** to return to the **My License** page.
- Click **View orders** to enter the **Order History** page.

3.9.4 Viewing Order History

System administrator and the sub-users of system administrator can view all the order history.

Step 1 Click [admin] at the top right of the page and choose **Order History**.

Step 2 Perform any of the following operations to view order details.

● Select an order and click **Detail**.

● Click an order number.

Step 3 (Optional) Select multiple orders and click **Amount Statistics** to view the total amount of the orders.